|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 4 | 3 | 2 | 1 |
| Claim | Clearly states claim correctly using vocabulary about where the load should be placed in relation to the fulcrum. | States where the load should be placed in relation to the fulcrum and correctly uses most vocabulary. | Does not clearly state where the load should be placed in relation to the fulcrum and uses little or incorrect vocabulary. | Incorrect or no claim present. |
| Evidence | Uses at least two pieces of data that support the claim with appropriate vocabulary. Each piece of data includes position of the load and the amount of effort, with correct units. | Uses at least two pieces of data that support the claim and uses most vocabulary.  Each piece of data includes the position of the load and the amount effort, with missing or incorrect units. | Uses only one piece of data that supports the claim and uses little or incorrect vocabulary.  Data includes position of the load and the amount of effort, with missing or incorrect units. | Evidence is missing or incorrect. |
| Reasoning | Accurately identifies the patterns of placing the load closer ***and*** farther from the fulcrum and uses correct vocabulary. | Identifies only one of the patterns of placing the load closer ***or*** farther from the fulcrum and uses some vocabulary. | Restates evidence and/or does not clearly explain the pattern of placing the load closer or farther from the fulcrum.  Uses little or incorrect vocabulary. | Incorrect or missing reasoning. |

Lever Experiment B

Claim, Evidence, and Reasoning Rubric

Lever Experiment B – Scientific Explanation

**Claim:** What is the effect of the position of the load on *the amount of* effort needed to lift the load?

**Evidence:** What is your evidence to support this claim?

**Reasoning:** What pattern do you see when the position of the load changes?

**Exemplar Response (4):**

***Claim:*** When the position of the load moves closer to the fulcrum, the amount of effort needed to lift the load decreases.

***Evidence:*** When the load was placed at 25 cm, the effort was 6 N. When the load was placed at 2.5 cm, the effort was 0.6 N. (\*Other high and low data points may be used.)

***Reasoning:*** When the distance between the load and the fulcrum increases, the effort needed to lift the load increases. When the distance between the load and the fulcrum decreases, the effort needed to lift the load decreases. *Do we need to state the difference between high and low??*

[](http://www.google.com/url?sa=i&rct=j&q=lever+clip+art&source=images&cd=&cad=rja&docid=HaZmkkCMGMYifM&tbnid=C58j5zH0Bnke9M:&ved=0CAUQjRw&url=http://etc.usf.edu/clipart/35900/35944/lever_35944.htm&ei=2YoXUuSrKaqfiQK9goGYBQ&bvm=bv.51156542,d.cGE&psig=AFQjCNGi_QBrWw-ZttFvZnx-hZFGvtRJzA&ust=1377360970495871)Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period:\_\_\_\_\_\_\_\_

Claim, Evidence, Reasoning Template

Lever Investigation B

|  |  |
| --- | --- |
| Claim:  ***What is the effect of the position of the load on the amount of effort needed to lift the load?*** |  |
| Evidence:  ***What is your evidence to support this claim?*** |  |
| Reasoning:  ***What pattern do you see when the position of the load changes?*** |  |